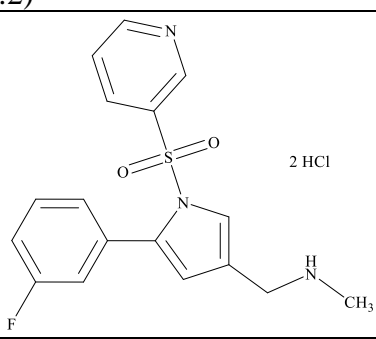


Certificate of Analysis

Certificate No.: 20210927017

Date: September 27, 2021

Retest date: September 15, 2024

Compound Name:	Vonoprazan Impurity 45 DiHCl	
Synonyms:	1-(5-(3-fluorophenyl)-1-(pyridin-3-ylsulfonyl)-1 <i>H</i> -pyrrol-3-yl)- <i>N</i> -methylmethanamine, hydrochloride (1:2)	
TLC Catalogue Number:	V-051047	
CAS Number:	881733-45-5 (free base)	
Molecular Weight:	345.39 2*36.46	
Molecular Formula:	C ₁₇ H ₁₆ FN ₃ O ₂ S · 2 HCl	
Source:	TLC Pharmaceutical Standards	
Source Lot No.:	4271-020A6	
Storage Conditions:	Store at 2-8 °C	
Solubility:	Methanol, DMSO	

Test Description	Specifications	Results
Visual Description	White to off-white solid	Conforms
Identification		
IR	Conforms to structure	Conforms
MS	Conforms to structure	Conforms
¹H NMR	Conforms to structure	Conforms
Elemental Analysis	Conforms to structure	Conforms
Purity (HPLC)	Not less than 95.0%	99.7%
Impurity (HPLC)	RT 13.73, 0.14%	
Water Content (KF)	N/A	4.8%
Residual Solvents (NMR)	0.1% diethyl ether	
Assay (%)	Not less than 90.0%	94.8%
Recommendation:	Release.	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		
Approved by:	Quality Assurance		

Attachments: HPLC, IR, MS and NMR spectra.